Work Order ID 77399 *77399*

December-06-11 1:47:41 PM

Item ID: D3391-023 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID:

Item Name: Mid Tube Assembly **Stop** *NS2*

Start Date: 06/12/2011 **Start Qty:** 1.00 *1* **Cust Item ID:**

Required Date: 13/12/2011 **Req'd Qty:** 1.00 *1* **Customer:**

Reference:

Approvals: **Process Plan:** M.L.J **Date:** 11/12/06 **Tooling:** ____ **Date:** ____ **Run Start** *NR1*

QC: ____ **Date:** ____ **SPC (Y/N):** ____ **Date:** ____ **Stop** *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp

Draw Nbr	Revision Nbr
D3391	I

100 — 0.00

100

Skidtubes — Skidtubes

Skidtubes

Skidtubes

Memo — 0.00

1-Cut tube to finish length as per Dwg D3391

2-Identify as D3391-023

3-Drill pilot holes using DT8796 (Do not drill "B" holes) and drill only 1 fwd saddle hole on one side only as per Dwg D3391

4-Open saddles and GHW holes to Ø0.375" exept for fwd saddle hole of detail "J"

5-Remove .030" from Fwd indexing Ridge as per Dwg D3391

6-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391

7-Deburr

8-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker,

9-Open wearplate holes of D3391-023 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J", do not open wearplate holes of section "J"

10-Open wearplate holes of D3391-023 assembly detail section H-H to Ø0.297" (20 holes) as per Dwg D3391

AT 12-01-05

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________ PAR #: ______ Fault Category: ____________ NCR: Yes No DQA: _____ Date: ________

Resolution: ____________ Disposition: ____________ QA: N/C Closed: ________ Date: ________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 77399 *77399*

December-06-11 1:47:41 PM

Item ID: D3391-023 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID:

Item Name: Mid Tube Assembly **Stop** *NS2*

Start Date: 06/12/2011 **Start Qty:** 1.00 *1* **Cust Item ID:**

Required Date: 13/12/2011 **Req'd Qty:** 1.00 *1* **Customer:**

Reference:

Run Start *NR1*

Approvals: **Process Plan:** ______ **Date:** ______ **Tooling:** ______ **Date:** ______

QC: ______ **Date:** ______ **SPC (Y/N):** ______ **Date:** ______

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp

11-Open .375" holes to .438" ***do not open fwd saddle holes*** JT 12-01-09

12-Locate D3391-021 in D3391-023 at 9.00" (see view z-z)

13- Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149 locating from previusly drill .188" dia hole, using t-pins and clicos to ensure perfect allingment, open up previusly tranfer drilled pilot holes in D3391-023/-021 to 0.438" dia. in D3391-021

14- Transfer drill 2 wearplate holes into D3391-021 using DT8217, locating from two previusly drilled holes, drill remaining wearplate holes into D3391-021. JT 12-01-09

15- Locating from two fwd wearplate holes drilol remaining 6 wearplte holes in D3391-021 using DT8937

16- Open 2 fwd wearplate holes in D3391-023 to .250" dia.

17- counterbore two aft wearplate holes in D3391-021 as per dwg

18- Open 12 wearplate holes in D3391-021 to 0.297" dia.

19-Deburr and blow out all chips from inside tube

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ PAR #: _______ Fault Category: __________________ NCR: Yes No DQA: _____ Date: _________

Resolution: ____________________ Disposition: ____________________ QA: N/C Closed: __________ Date: _________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 77399

December-06-11 1:47:41 PM

77399

Item ID: D3391-023

Revision ID:

Item Name: Mid Tube Assembly

Accept *N900040100*

Setup **Start** *NS1*

Stop *NS2*

Start Date: 06/12/2011 **Start Qty:** 1.00 *1*

Required Date: 13/12/2011 **Req'd Qty:** 1.00 *1*

Cust Item ID:

Customer:

Reference:

Run **Start** *NR1*

Stop *NR2*

Approvals: **Process Plan:** ________ **Date:** ________ **Tooling:** ________ **Date:** ________

QC: ________ **Date:** ________ **SPC (Y/N):** ________ **Date:** ________

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110 *110* QC Quality Control	QC5- Inspect part completeness to step on W/O **Memo**	0.00 0.00	S 12/01/10						
120 *120* HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 **Memo**	0.00 0.00				①	∅ / QC		12-1-10
130 *130* QC Quality Control	QC3- Inspect Part Finish **Memo**	0.00 0.00				DP	12-1-10		

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W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________ **PAR #:** ______ **Fault Category:** ____________ **NCR:** Yes No **DQA:** _____ **Date:** ______

Resolution: ____________ **Disposition:** ____________ **QA: N/C Closed:** ________ **Date:** ______

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Work Order ID 77399

December-06-11 1:47:41 PM

77399

Item ID:	D3391-023	**Accept**	*N900040100*
Revision ID:			
Item Name:	Mid Tube Assembly		
Start Date:	06/12/2011	**Start Qty:** 1.00	*1*
Required Date:	13/12/2011	**Req'd Qty:** 1.00	*1*
Reference:			

Setup Start *NS1* Stop *NS2*

Cust Item ID:

Customer:

Run Start *NR1* Stop *NR2*

Approvals: **Process Plan:** ________ **Date:** ________ **Tooling:** ________ **Date:** ________

QC: ________ **Date:** ________ **SPC (Y/N):** ________ **Date:** ________

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140 *140* Skidtubes Skidtubes	Skidtubes **Memo** 1-Open float bag holes as per dwg 2-C'sink float bag holes as per dwg 3- Prepare tube for welding 4-Bond web in place as per Dwg D3391 & QSI 015. Adhere for 12 hours) A/R Sikaflex exp: 12-08-03 batch#: 119506	0.00 0.00 DP 12-1-10 ET 12-01-11							
150 *150* QC Quality Control	QC5- Inspect part completeness to step on W/O **Memo**	0.00 0.00				1	Ø		BE 12-01-12
160 *160* Skidtubes Skidtubes	Skidtubes **Memo** 1-Weld crossbolt spacer as per dwg D3391 & QSI 004 2-grind weld flush	0.00 0.00 A/R m119712 BB 12/01/12				1	Ø		BE 12-01-12

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W/O:	WORK ORDER CHANGES						
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: ____________ **PAR #:** ______ **Fault Category:** ____________ **NCR:** Yes No **DQA:** _____ **Date:** ________

Resolution: ____________ **Disposition:** ____________ **QA: N/C Closed:** ________ **Date:** ________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
			Corrective Action Section B					
DATE	**STEP**	**Description of NC** Section A	**Initial** Chief Eng	**Action Description** Chief Eng	**Sign & Date**	**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector

NOTE: Date & initial all entries

Work Order ID 77399

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77399

Item ID:	D3391-023	**Accept**	*N900040100*
Revision ID:			
Item Name:	Mid Tube Assembly		

Setup Start *NS1* Stop *NS2*

Start Date:	06/12/2011	**Start Qty:** 1.00	*1*	**Cust Item ID:**
Required Date:	13/12/2011	**Req'd Qty:** 1.00	*1*	**Customer:**
Reference:				

Run Start *NR1* Stop *NR2*

Approvals: **Process Plan:** ____________ **Date:** ________ **Tooling:** ________ **Date:** ________

QC: ____________ **Date:** ________ **SPC (Y/N):** ________ **Date:** ________

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170 *170* QC Quality Control	QC10- Inspect visual per QSI004- ground welds **Memo**	0.00 0.00	S 12/01/12						
180 *180* QC Quality Control	QC5- Inspect part completeness to step on W/O **Memo**	0.00 0.00	S 12/01/12						
185 *185* HandFinish Hand Finishing	Pressure Wash per QSI005 4.3 **Memo** AND REALODINE AS PER PAR09-043	0.00 0.00				1X Ø M 12/01/16			

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W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ **PAR #:** _______ **Fault Category:** __________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

Resolution: ____________________ **Disposition:** _____________________ **QA: N/C Closed:** __________ **Date:** _________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 77399

77399

December-06-11 1:47:41 PM

Item ID: D3391-023
Revision ID:
Item Name: Mid Tube Assembly

Accept *N900040100*

Setup **Start** *NS1*
Stop *NS2*

Start Date: 06/12/2011 **Start Qty:** 1.00 *1*
Required Date: 13/12/2011 **Req'd Qty:** 1.00 *1*
Reference:

Cust Item ID:
Customer:

Run **Start** *NR1*
Stop *NR2*

Approvals: **Process Plan:** ______ **Date:** ______ **Tooling:** ______ **Date:** ______
QC: ______ **Date:** ______ **SPC (Y/N):** ______ **Date:** ______

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190 *190* Powdercoat Powder Coating M119480	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum **Memo** START TIME: 9:30 OVEN TEMPERATURE: 320°F FINISH TIME: 10:00	0.00 0.00				1X	∅	MF	12/01/16
200 *200* QC Quality Control	QC3- Inspect Part Finish **Memo**	0.00 0.00				1	∅	JH	12/01/19

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W/O:	WORK ORDER CHANGES						
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: ____________________ **PAR #:** _______ **Fault Category:** __________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

Resolution: ____________________ **Disposition:** _____________________ **QA: N/C Closed:** __________ **Date:** _________

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

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Item ID: D3391-023 **Accept** *N900040100* **Setup Start** *NS1*
Revision ID:
Item Name: Mid Tube Assembly **Stop** *NS2*

Start Date: 06/12/2011 **Start Qty:** 1.00 *1* **Cust Item ID:**
Required Date: 13/12/2011 **Req'd Qty:** 1.00 *1* **Customer:**
Reference:

Run Start *NR1*
Stop *NR2*

Approvals: **Process Plan:** ________ **Date:** ________ **Tooling:** ________ **Date:** ________
QC: ________ **Date:** ________ **SPC (Y/N):** ________ **Date:** ________

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210 *210* Skidtubes Skidtubes	Skidtubes	0.00 / 0.00				1	ϕ		12/01/19
	Memo 1- insert D3391-021 into D3391-23 2- insert T-pins into first and third fwd saddle holes 3- ON FIRST SIDE ONLY drill out 2nd and forth fwd saddles holes to 0.500" as per DSI 9364 4- remove T-pins and locate DT9415 from first and third crossbolt hole using T-pins and clekos 5- ON 2ND SIDE ONLY ream out 2nd and forth saddle hole to 0.499". Remove DT9415 6- deburr, re-alodine and blow out chips 7- press fit D3591-1 spacers using DT9416 starting from 0.500" side								
220 *220* QC Quality Control	QC5- Inspect part completeness to step on W/O **Memo**	0.00 / 0.00							

S12/6/20

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ **PAR #:** _______ **Fault Category:** __________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

Resolution: ____________________ **Disposition:** _____________________ **QA: N/C Closed:** __________ **Date:** _________

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Item ID: D3391-023 **Accept** *N900040100* **Setup Start** *NS1*
Revision ID:
Item Name: Mid Tube Assembly **Stop** *NS2*

Start Date: 06/12/2011 **Start Qty:** 1.00 *1* **Cust Item ID:**
Required Date: 13/12/2011 **Req'd Qty:** 1.00 *1* **Customer:**
Reference:

Run Start *NR1*
Stop *NR2*

Approvals: **Process Plan:** ______ **Date:** ______ **Tooling:** ______ **Date:** ______
QC: ______ **Date:** ______ **SPC (Y/N):** ______ **Date:** ______

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230 *230* HandFinish Hand Finishing	HandFinishing **Memo** ✓Install Inserts as per Dwg	0.00 0.00				1	∅	Ml	12/01/19
240 *240* QC Quality Control	QC5- Inspect part completeness to step on W/O **Memo**	0.00 5172(01/70 0.00				(stamp)			
250 *250* Packaging Packaging	Identify as per dwg & Stock Location: W10 **Memo**	0.00 412-742-043/ ~~B75911~~ 1379104 0.00				1	∅	Ml	12/06/19

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W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ **PAR #:** _______ **Fault Category:** __________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

Resolution: ____________________ **Disposition:** ____________________ **QA: N/C Closed:** __________ **Date:** _________

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 77399

December-06-11 1:47:41 PM

77399

Item ID: D3391-023

Revision ID:

Item Name: Mid Tube Assembly

Accept *N900040100*

Setup **Start** *NS1*

Stop *NS2*

Start Date: 06/12/2011 **Start Qty:** 1.00 *1*

Required Date: 13/12/2011 **Req'd Qty:** 1.00 *1*

Cust Item ID:

Customer:

Reference:

Run **Start** *NR1*

Stop *NR2*

Approvals: **Process Plan:** ______ **Date:** ______ **Tooling:** ______ **Date:** ______

QC: ______ **Date:** ______ **SPC (Y/N):** ______ **Date:** ______

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
260 *260*	QC21- Final Inspection - Work Order Release	0.00					12/1/23		
QC Quality Control	**Memo**	0.00							

12-01-20

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ **PAR #:** _______ **Fault Category:** __________________ **NCR:** Yes No **DQA:** _____ **Date:** __________

Resolution: ____________________ **Disposition:** ____________________ **QA: N/C Closed:** __________ **Date:** __________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

December-06-11 1:47:45 PM

Work Order ID: 77399 *77399*

Parent Item: D3391-023 *D3391-023*

Parent Item Name: Mid Tube Assembly

Start Date: 06/12/2011 **Required Date:** 13/12/2011

Start Qty: 1.00 **Required Qty:** 1.00

Comments:
IPP A05.10.20New Issue KJ/EC
IPP B06.02.10ECN773 dwg rev.D EC
IPP C 07.03.20 rev F dwg EC
IPP D 07.03.28 re-format EC
IPP E 07.10.31 ecn 1053P EC
IPP Rev:F ECN 1056 07-11-13 DD verified by: EC
IPP Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC
IPP Rev:H 08-09-10 revH as per dwg DD verified by:EC
IPP Rev: I 08-11-13 Removed steps per w/o, QC KJ verified by: ec IPP
Rev:J add in seq 140 expire date &b# sikaflex DD 10.02.17 verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2500-1-100 *D2500-1-100* Skidtube Extrusion		Manufactured	No			100	Each	54.0000	1 **	1	JT	12-01-09	
D3391-021 *D3391-021* Fwd Tube Assembly		Manufactured	No			100 77387	Each	0.0000	1 **	1	JT	12-01-09	
D3389-1 *D3389-1* Web		Manufactured	No			140 77031	Each	2.0000	1 **	1	JT	12-01-11	

D2500-1-100 locations:

Location		Loc Qty	Loc Code	
HALL		54		
	50251	54		X1

D3389-1 locations:

Location		Loc Qty	Loc Code
LG		2	
	76209	2	

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W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ______________ **PAR #:** ______ **Fault Category:** ______________ **NCR:** Yes No **DQA:** _____ **Date:** _________

Resolution: ______________ **Disposition:** ______________ **QA: N/C Closed:** _________ **Date:** _________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID: 77399 *77399*

Parent Item: D3391-023 *D3391-023*

Parent Item Name: Mid Tube Assembly

Start Date: 06/12/2011 **Required Date:** 13/12/2011

Start Qty: 1.00 **Required Qty:** 1.00

D3681-1 Manufactured No 160 Each 64.0000 5 5

D3681-1 ** BE12-01-12

Spacer

Location	Loc Qty	Loc Code	
LG001	64		
68958	2		
69893	2		
71845	2		
74874	33		5
76004	25		

D3591-1 Manufactured No 210 Each 33.0000 2 2

D3591-1 ** B77580 (x2) M 12/01/19

Bushing

Location	Loc Qty	Loc Code	
ST068	33		
57350	1		
66147	4		
71847	28		

ALS4-1032-130 Purchased No 230 Each 2,176.000 20 20

ALS4-1032-130 ** M 12/01/19

Insert

Location	Loc Qty	Loc Code	
ST280	1976		
119084	1976		x20
ST281	200		
119632	200		

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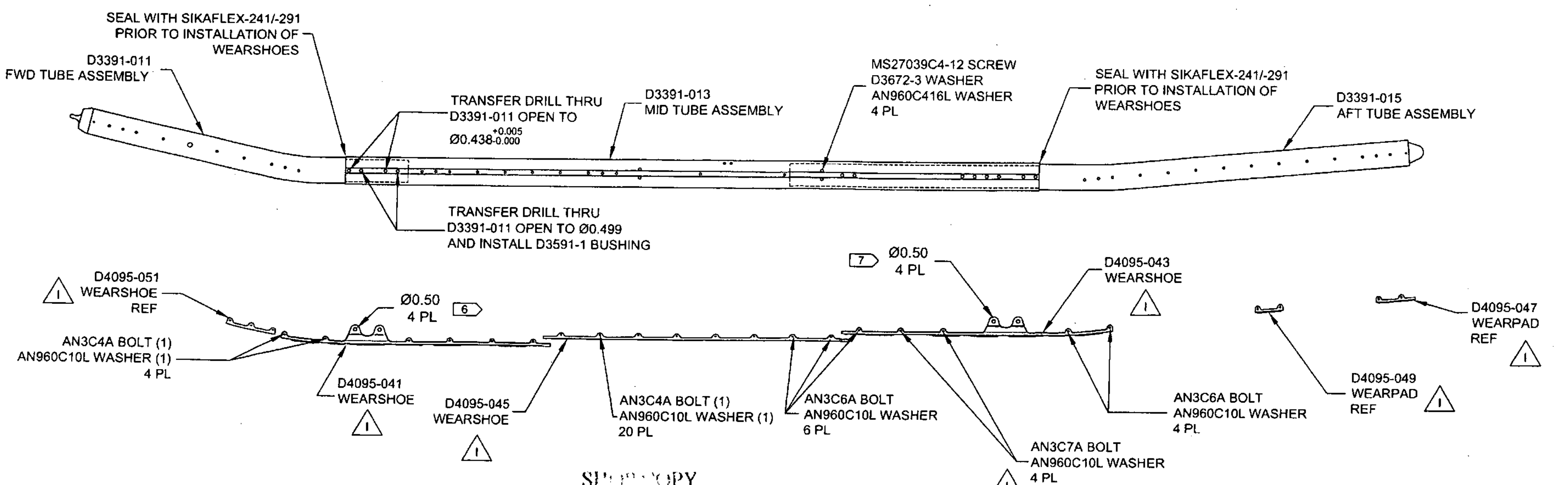
W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ **PAR #:** _______ **Fault Category:** __________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

Resolution: ____________________ **Disposition:** ____________________ **QA: N/C Closed:** __________ **Date:** _________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D3391-041 ASSEMBLY

D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY -041	PART NUMBER	DESCRIPTION
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
2	D3591-1	BUSHING
4	D3672-3	WASHER
1	D4095-041	WEARSHOE
1	D4095-043	WEARSHOE
1	D4095-045	WEARSHOE
1	D4095-047	WEARPAD
1	D4095-049	WEARPAD
1	D4095-051	WEARSHOE
24	AN3C4A	BOLT
10	AN3C6A	BOLT
4	AN3C7A	BOLT
38	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

GENERAL NOTES

1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
2) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.
6) FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-041
7) FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-043

REV.	DESCRIPTION	BY	DATE
I	REMOVE GASKETS AND REPLACE ALL WEARSHOES; PARTS LIST UPDATE, ZN A8-1, ZN A8-2, ZN A6-4, ZN B6-8; LPS-3 COATING REMOVED FROM NOTE 2, ZN A3-1, ZN A3-2, REMOVED INSERT AELS-1032-130, ZN B6-4, B2-4, C7-8, C3-8; REMOVED HOLES, ZN D6-4 ZN D2-4, ZN D7-8, ZN D3-8	XDF	11.10.13
H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07

DESIGN	PH	**DART AEROSPACE USA, INC** KENT, WA
DRAWN	XDF	
CHECKED		DRAWING NO. D3391 — REV. I — SHEET 1 OF 8
MFG. APPR.		
APPROVED		TITLE 412 FLOAT SKIDTUBE — SCALE NTS
DE APPR.		
DATE	11.10.13	

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

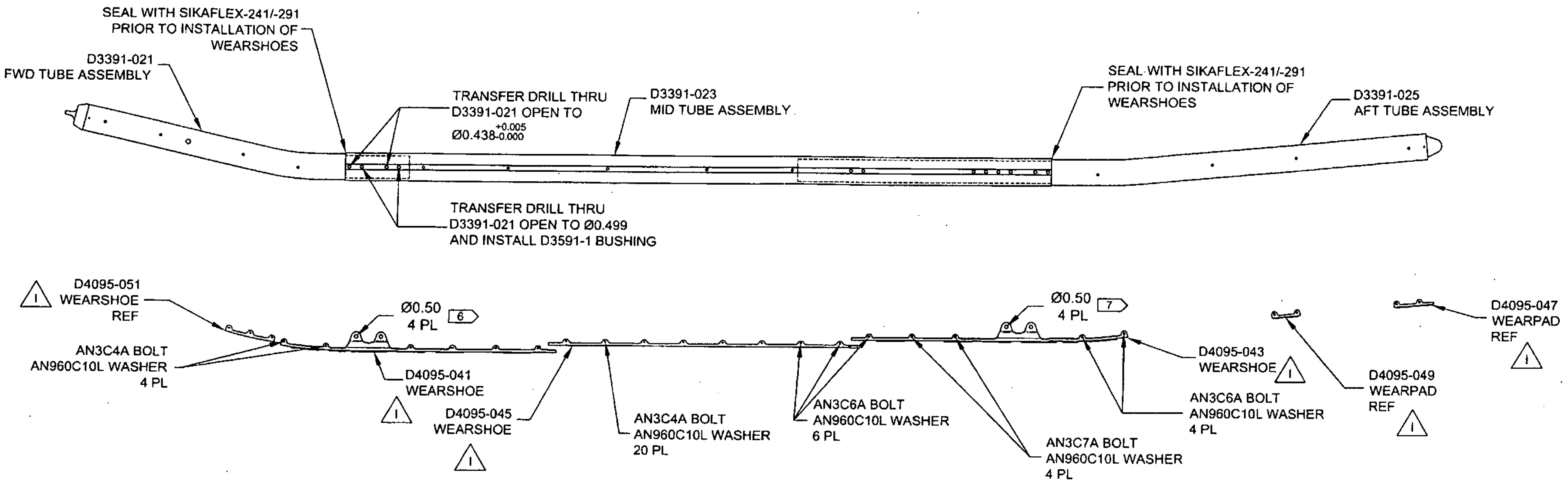
Part No: ____________________ **PAR #:** _______ **Fault Category:** __________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

Resolution: ____________________ **Disposition:** ____________________ **QA: N/C Closed:** __________ **Date:** _________

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

77399



D3391-043 ASSEMBLY

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY -043	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
2	D3591-1	BUSHING
1	D4095-041	WEARSHOE
1	D4095-043	WEARSHOE
1	D4095-045	WEARSHOE
1	D4095-047	WEARPAD
1	D4095-049	WEARPAD
1	D4095-051	WEARSHOE
24	AN3C4A	BOLT
10	AN3C6A	BOLT
4	AN3C7A	BOLT
38	AN960C10L	WASHER

GENERAL NOTES

1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
2) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY. CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.
6) FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-041
7) FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-043

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DRAWN	XDF		
CHECKED		DRAWING NO.	REV. I
MFG. APPR.		D3391	SHEET 2 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	11.10.13		

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

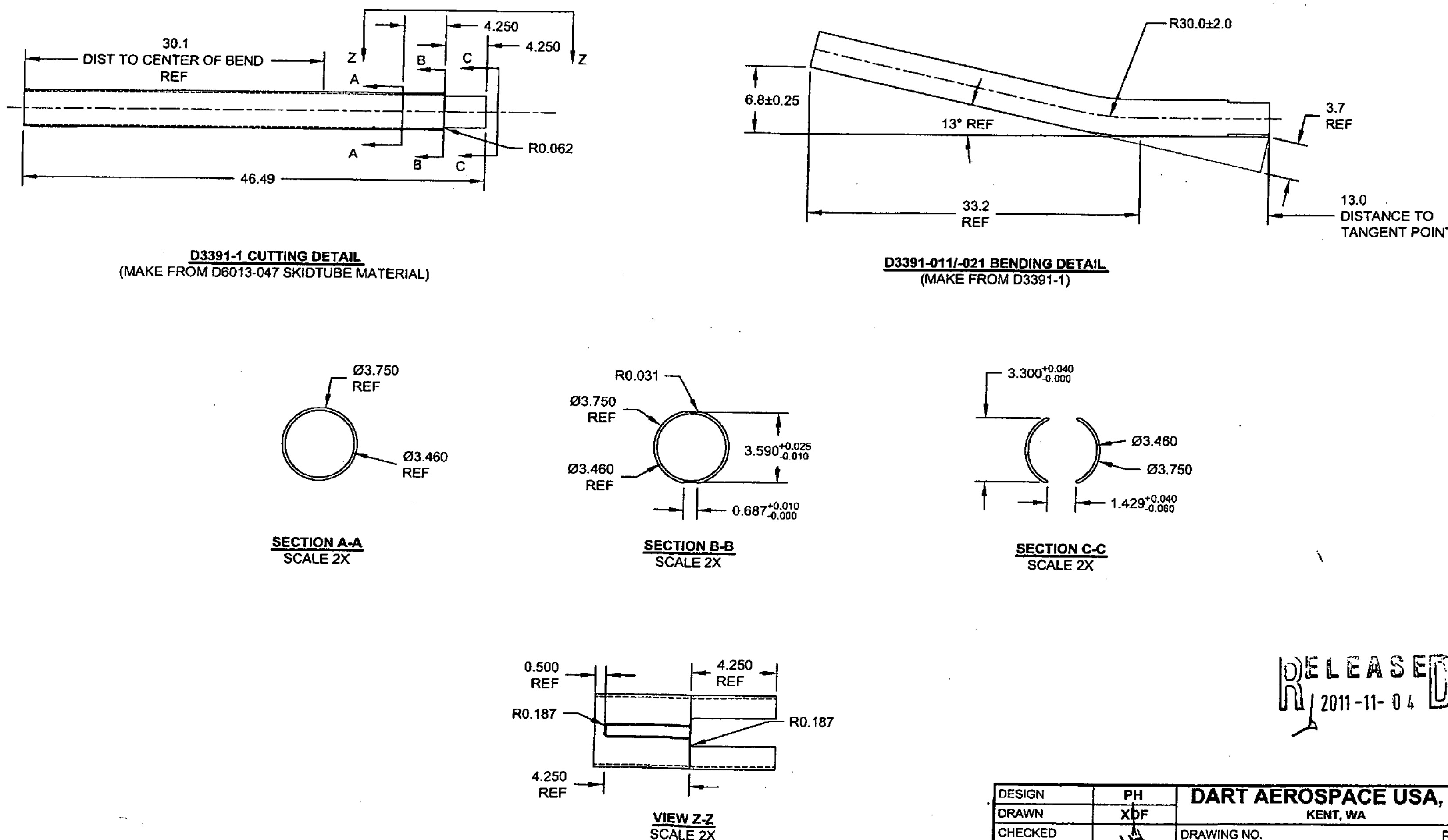
Part No: ____________________ PAR #: _______ Fault Category: __________________ NCR: Yes No DQA: _____ Date: _________

Resolution: ____________________ Disposition: _____________________ QA: N/C Closed: __________ Date: _________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)								
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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		DART AEROSPACE USA, INC KENT, WA	
DESIGN	PH		
DRAWN	XDF		
CHECKED		DRAWING NO.	REV. I
MFG. APPR.		D3391	SHEET 3 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	11.10.13		

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ____________________ PAR #: _______ Fault Category: __________________ NCR: Yes No DQA: _____ Date: _________

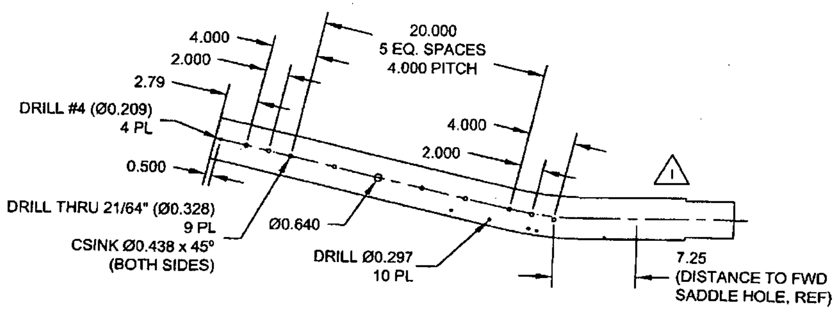
Resolution: ____________________ Disposition: ____________________ QA: N/C Closed: __________ Date: _________

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

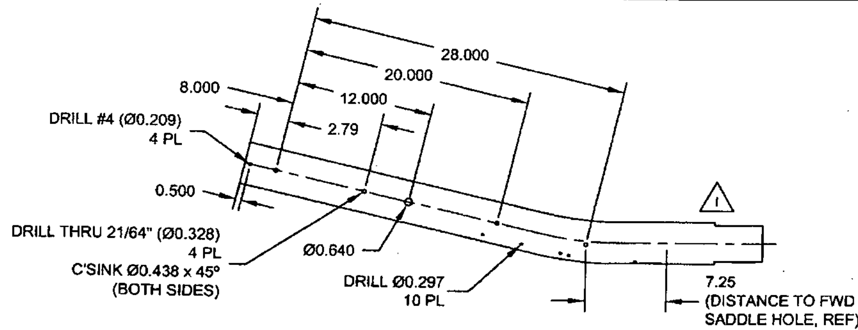
NOTE: Date & initial all entries

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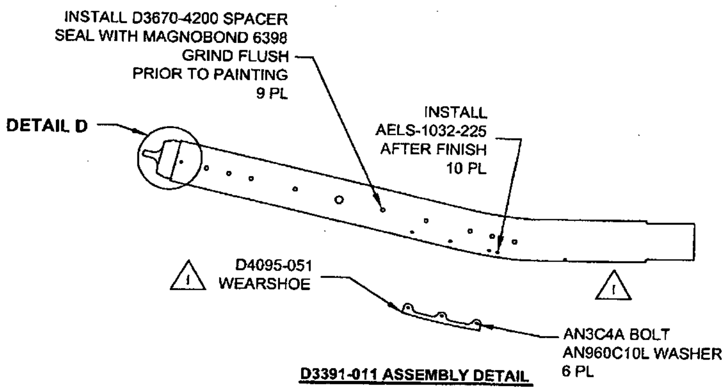
77399



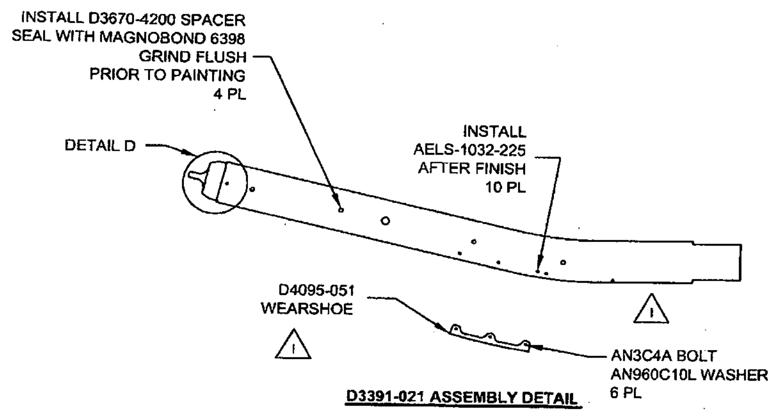
D3391-011 DRILLING DETAIL



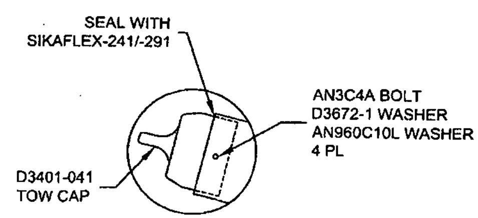
D3391-021 DRILLING DETAIL



D3391-011 ASSEMBLY DETAIL



D3391-021 ASSEMBLY DETAIL



DETAIL D
SCALE 2X

D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X		D3391-011	FWD TUBE ASSEMBLY
	X	D3391-021	FWD TUBE ASSEMBLY
1	1	D3401-041	TOW CAP
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
1	1	D4095-051	WEARSHOE
1	1	D6013-047	FWD TUBE
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
10	10	AELS-1032-225	INSERT

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DESIGN	PH	DART AEROSPACE USA, INC KENT, WA
DRAWN	XDF	
CHECKED		DRAWING NO. D3391 — REV. I — SHEET 4 OF 8
MFG. APPR.		
APPROVED		TITLE 412 FLOAT SKIDTUBE — SCALE NTS
DE APPR.		
DATE	11.10.13	

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

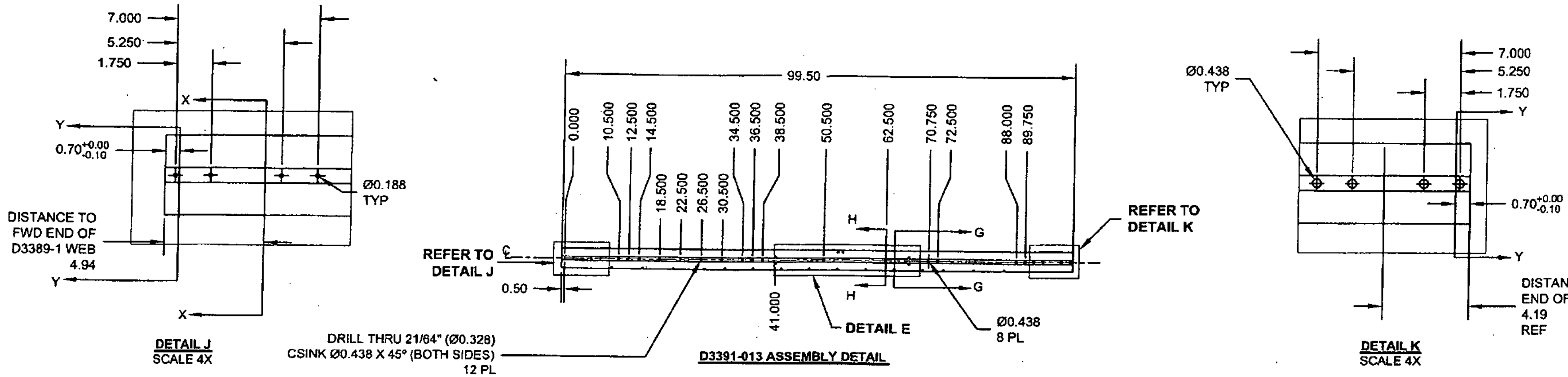
Part No: ________________ **PAR #:** _______ **Fault Category:** ________________ **NCR:** Yes No **DQA:** _____ **Date:** _________

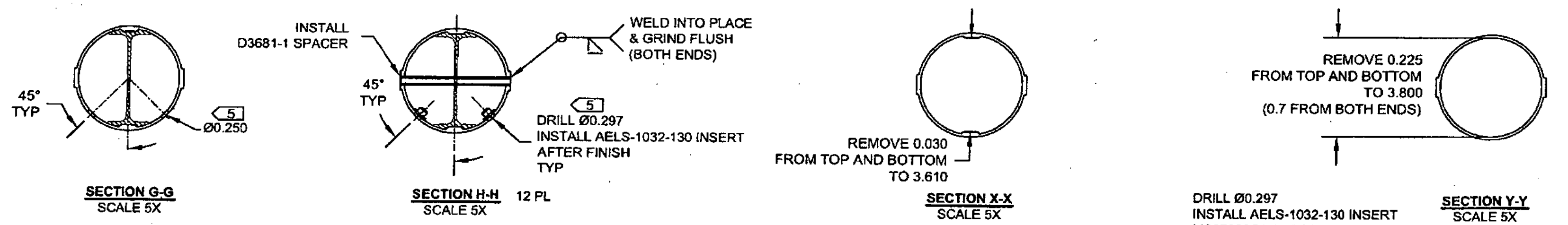
Resolution: ________________ **Disposition:** ________________ **QA: N/C Closed:** __________ **Date:** _________

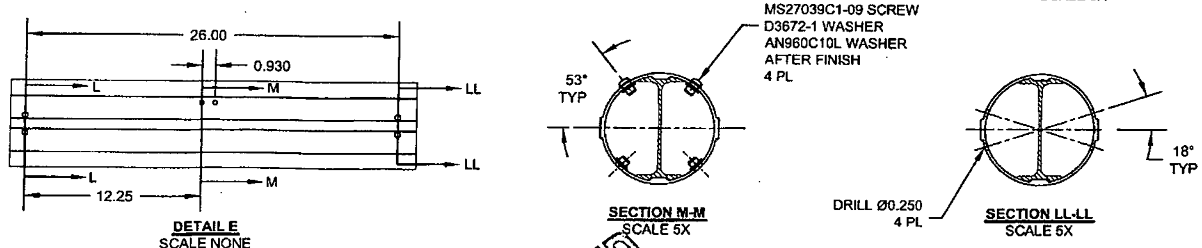
NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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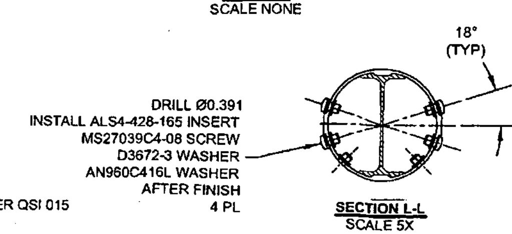






D3391-013 MID TUBE ASSEMBLY PARTS LIST

QTY -013	PART NUMBER	DESCRIPTION
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW



RELEASED 2011-11-04

D3391-013 MID TUBE ASSEMBLY

1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
3) WELDING: PER DART QSI 004

DESIGN	PH	**DART AEROSPACE USA, INC** KENT, WA
DRAWN	XDF	DRAWING NO. D3391 — REV. I — SHEET 5 OF 8
CHECKED		
MFG. APPR.		
APPROVED		TITLE 412 FLOAT SKIDTUBE — SCALE NTS
DE APPR.		
DATE	11.10.13	

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

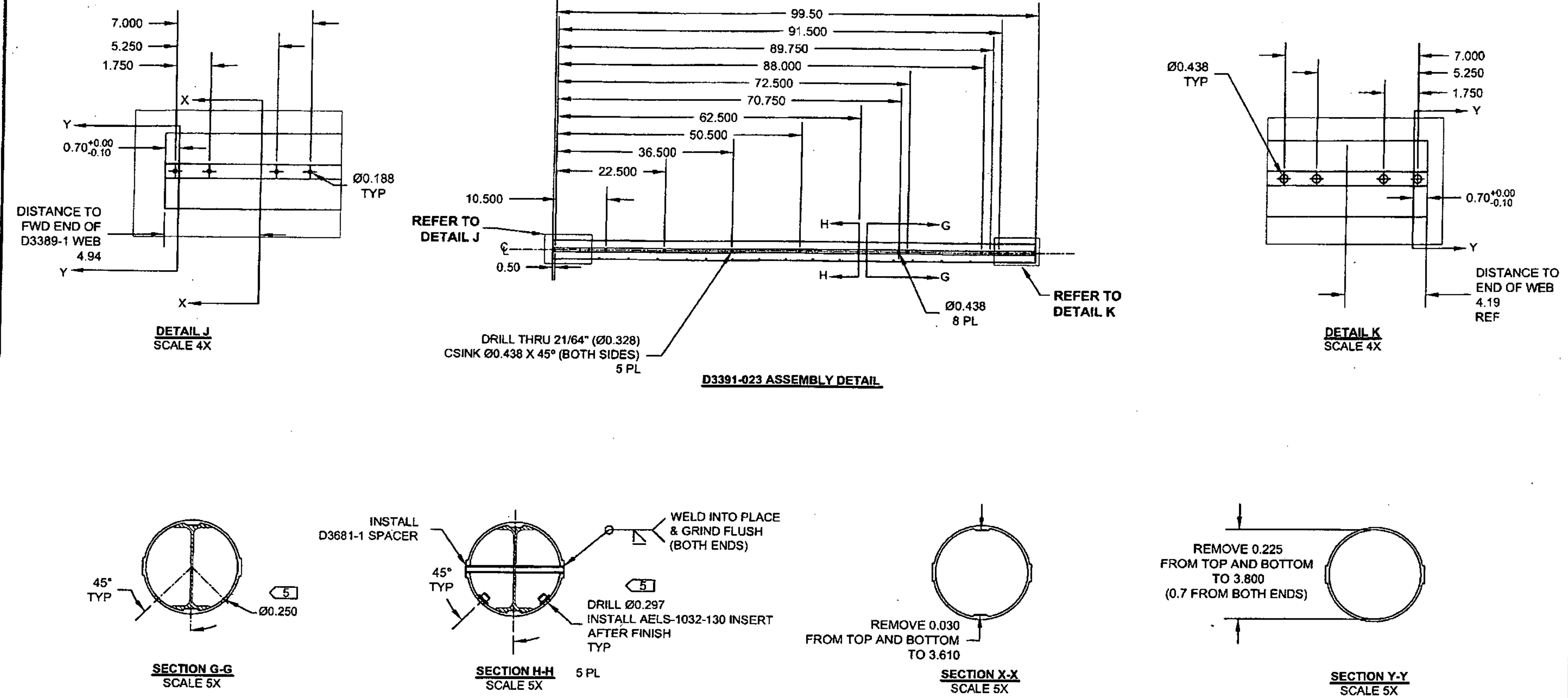
Part No: ____________________ PAR #: _______ Fault Category: __________________ NCR: Yes No DQA: _____ Date: _________

Resolution: ____________________ Disposition: ____________________ QA: N/C Closed: __________ Date: _________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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RELEASED 2011-11-04

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
3) WELDING: PER DART QSI 004

DESIGN	PH	**DART AEROSPACE USA, INC** KENT, WA	
DRAWN	XDF		
CHECKED		DRAWING NO. D3391	REV. I SHEET 6 OF 8
MFG. APPR.			
APPROVED		TITLE 412 FLOAT SKIDTUBE	SCALE NTS
DE APPR.			
DATE	11.10.13		

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: ____________ **PAR #:** ______ **Fault Category:** ____________ **NCR:** Yes No **DQA:** _____ **Date:** ________

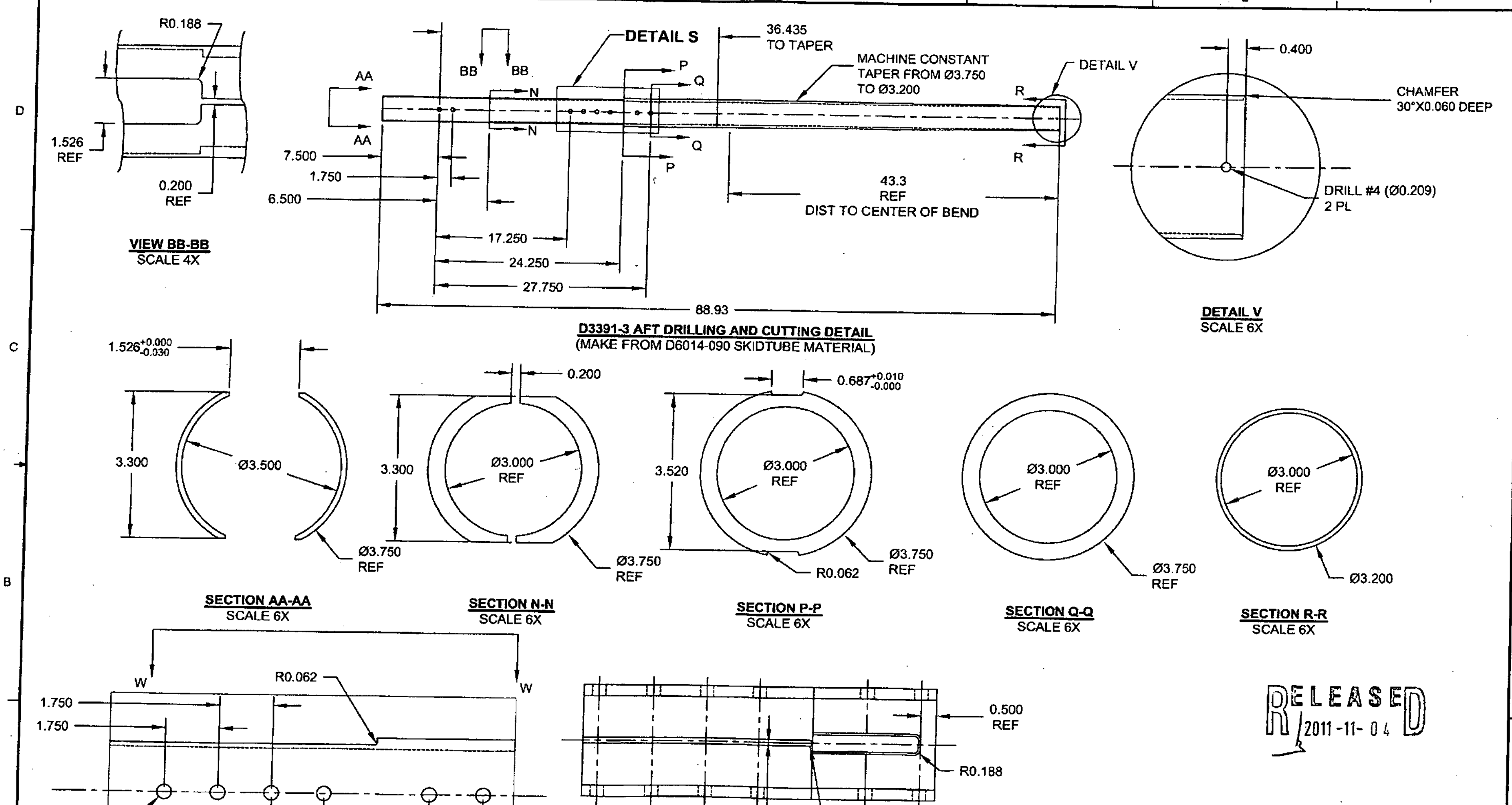
Resolution: ____________ **Disposition:** ____________ **QA: N/C Closed:** ________ **Date:** ________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
			Corrective Action Section B					
DATE	**STEP**	**Description of NC** Section A	**Initial** Chief Eng	**Action Description** Chief Eng	**Sign & Date**	**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector

NOTE: Date & initial all entries

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DESIGN	PH	DART AEROSPACE USA, INC KENT, WA	
DRAWN	XDF	DRAWING NO. D3391	REV. I SHEET 7 OF 8
CHECKED			
MFG. APPR.		TITLE 412 FLOAT SKIDTUBE	SCALE NTS
APPROVED			
DE APPR.			
DATE	11.10.13		

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

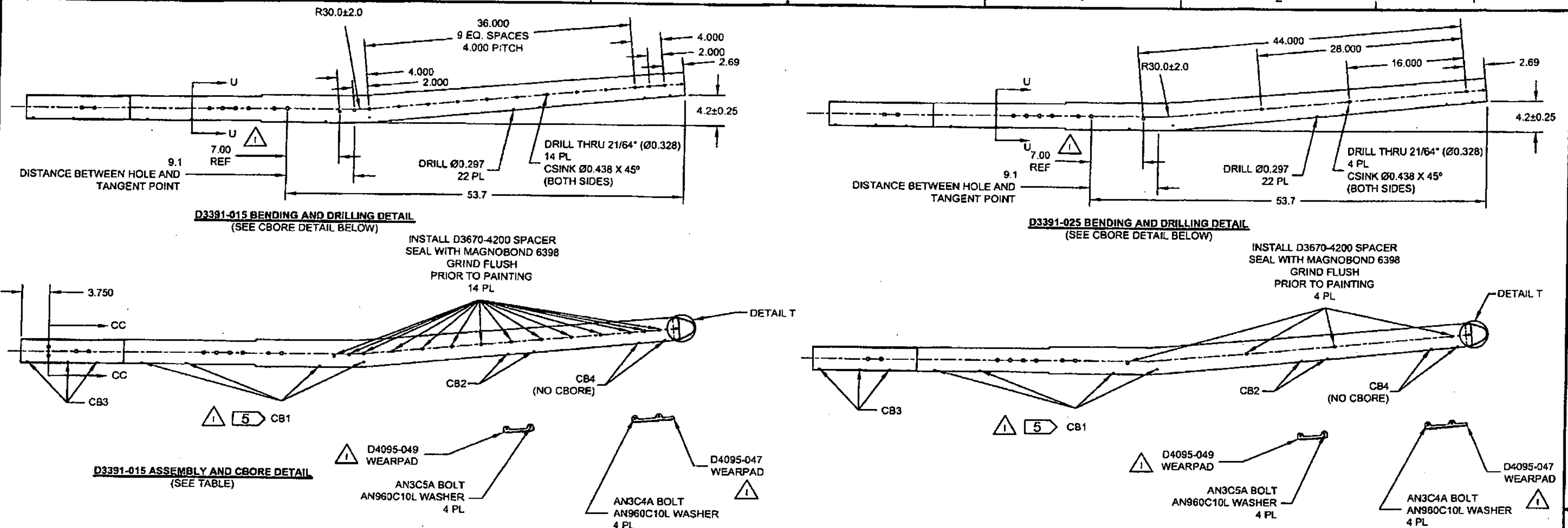
Part No: ____________ **PAR #:** ______ **Fault Category:** ____________ **NCR:** Yes No **DQA:** _____ **Date:** ________

Resolution: ____________ **Disposition:** ____________ **QA: N/C Closed:** ________ **Date:** ________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

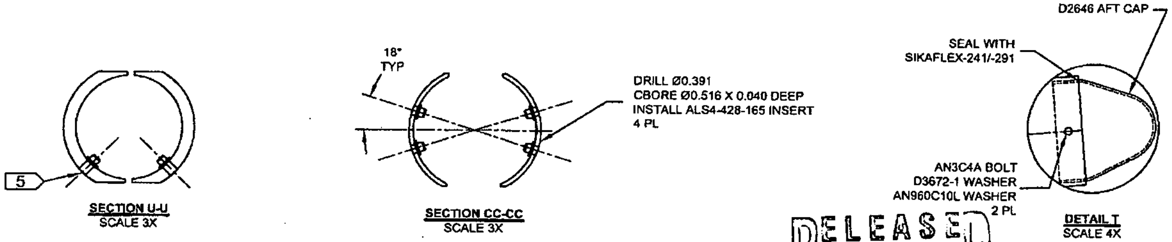
NOTE: Date & initial all entries

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D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X		D3391-015	AFT TUBE ASSEMBLY
	X	D3391-025	AFT TUBE ASSEMBLY
1	1	D2646	AFT CAP
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
1	1	D4095-049	WEARPAD
1	1	D4095-047	WEARPAD
1	1	D6014-090	AFT TUBE
14	14	AELS-1032-130	INSERT
8	8	AELS-1032-225	INSERT
4		ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER



RELEASED 2011-11-04

C'BORE HOLES MARKED CB1-CB4 AS FOLLOWS AND INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	CBORE	P/N
CB1	8	8	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130

DESIGN	PH	**DART AEROSPACE USA, INC** KENT, WA
DRAWN	XDF	
CHECKED		DRAWING NO. D3391 — REV. I — SHEET 8 OF 8
MFG. APPR.		
APPROVED		TITLE 412 FLOAT SKIDTUBE — SCALE NTS
DE APPR.		
DATE	11.10.13	

Dart Aerospace Ltd

W/O:	WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: ______________ **PAR #:** ______ **Fault Category:** ______________ **NCR:** Yes No **DQA:** _____ **Date:** ________

Resolution: ______________ **Disposition:** ______________ **QA: N/C Closed:** ________ **Date:** ________

NCR:	WORK ORDER NON-CONFORMANCE (NCR)							
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 277

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 75959
Part number: D3391 - 023
Description: Skid tub
Welding Process: Tig[X] Mig[ ]
Base materiel: aluminum
Current: AC[✓] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual:	pass[✓]	fail[ ]
Penetration:	pass[✓]	fail[ ]

UNACCEPTABLE

Cracks:	pass[✓]	fail[ ]
Undercut:	pass[✓]	fail[ ]
Pin holes:	pass[✓]	fail[ ]
Overlap (cold lap)	pass[X]	fail[ ]
Porosity (surface):	pass[X]	fail[ ]
Coloration:	pass[X]	fail[ ]

Qualifier [signature] **Date of Test Coupon** 11-12-16

Welder [signature: Barclay Elliott] **Date of Test Coupon** 11-12-16

The above named individual is qualified in accordance with AWS D17.1.2001 to weld